

Amended claims

1. (CURRENTLY AMENDED) (An energetic rotary) A volumetric type machine, said Turbinary machine, having an exterior housing with a cylindrical cavity, in which are dynamically set up two complementary compressive parts, each having a specific number of sides according to the rules of the art of rotary machines, being a cylindrical part and a paddle part, these parts realizing compression chambers in complicity, (the number of compressions realized per cycle being equal or above the number of sides of the paddle) the cylindrical part having an annular (form) shape with a circular exterior profile and an interior opening chosen in function of the form of the paddle part, the paddle part being set up in the interior opening of the cylindrical part, these parts forming a figure, said Material Figure of the machine, these complementary compressive parts (being realized between themselves and) being connected between themselves and synchronized by a set of mechanical inductions, one of the compressive parts being connected directly or indirectly to an exit power axle, this machine being mechanically characterized by the fact that the speed of retro rotation of the paddle on its crankpin or eccentric is equal to that of the post rotation of said crankshaft or eccentric, the mechanical control of the paddle orientation being preferably assured by a mechanical induction in which the gear ratio is of one to one between the support gear and induction gear of the machine, and the support of the cylindrical part being assured by a mechanic which induces a rotary movement of which the speed is equal to one to P , P being the number of sides of the cylinder, of the speed of the eccentric, crankshaft, or set of crankshaft set of the paddle part, these material apparatus simultaneously realizing the specific kinetic and geometrical characteristics of the machine, which are determined by the fact that, for each of the points of the paddle (structure) part realized for a complete (machine) paddle cycle, (a circular figure), a figure in relation to the housing, said Movement Figure of the paddle part, of equal circular shapes, the centers of these circular shapes being equidistant between themselves, and located in periphery and at equal distance from the center of the cylindrical cavity, the paddle (structure) part effecting a circular displacement all while conserving a same orientation for it's whole course, thus performing a rotational translation movement, the cylindrical part turning around the paddle (structure) part, thus describing a rotary translation movement, synchronized with that of the paddle part, which realizes a number of paddle top point and compressions realized per translational cycle equal (or above) to the number of sides of the paddle, the group of the paddle positions during the compressions forming the Geometric Figure, these compressions being realized successively, which forms the Realization Sequence Figure of the machine.

2. (CURRENTLY AMENDED) (A ~~rotary type energetic~~) A volumetric type machine, said Turbinary machine, having an exterior housing with a cylindrical cavity in which two complementary compressive parts are set up dynamically, each having a specific number of sides established according to rules of the art of rotary machines, being a cylindrical part and a paddle part, these parts realizing compression chambers in complicity, (~~the number of compressions realized per cycle being equal or superior to the number of sides of the paddle structure~~) the cylindrical part being set up in a rotary manner in the cylindrical cavity, the cylindrical part having an annular shape with a circular exterior profile and an interior opening chosen in function of the shape of the paddle (structure) part, the paddle (structure) part being set up in the interior opening of the cylindrical part, these parts forming a figure said the Material Figure of the machine, complementary compressive parts preferably being connected between themselves and synchronized by a set of mechanical inductions sharing of a common element, one of these compressive parts being directly or indirectly connected to an exit power axle, the mechanical relationship of said machine characterized by the fact that the speed ratio of retro rotation of the paddle on its crankpin or eccentric on the speed of the post rotation of this crankshaft or eccentric is between 1/1 and the number of sides of the paddle to that of the cylinder of the Material Figure, or either, between 1/1 and the number of sides of paddle to that of the cylinder of the contrary type of cylinder of the Material figure of the machine for the same paddle, the mechanical control of the orientation of the paddle being preferably assured by a mechanical induction in which the support and induction gear ratios are between 1/1 and the number of sides of the paddle to that of the cylinder, or, either, of 1/1 and the number of sides of paddle to that of the cylinder of the contrary type of cylinder of the machine for the same paddle, the speed of the rotary movement of the cylindrical part around the paddle structure being equal to 360 divided by the number of sides of material cylinder, minus the number of degrees of rotation of the eccentric between each top point of the paddle, this material apparatus realizing the preferable specific kinetic and geometrical characteristic of the machine when each (point) extremity of the paddle structure realizes during its complete cycle (~~of the machine whereas for each of the points of the paddle structure realize, and which N is superior to two for a complete cycle of the machine~~), a (geometric) figure defined by an N number of successive lobes in which the center of this geometric figure coincides with the center of the cylindrical cavity, this figure being said Movement Figure of the paddle, the set of all maximal top point of the paddle and compression locations for a complete machine cycle realizes a geometric figure, said Geometric Figure of the machine, number of sides of the Geometric Figure being generally equal to the number of sides of the Movement Figure, the realization of the totality of the sides of the Geometric Figure being realized by alternating sides, this forming the figure of Sequence Realization of the Geometric Figure, the control mechanic of the orientation of the paddle part being defined according to ratios established according to the relation of the Material figure of the paddle part and the Realization Sequence of the Geometric Figure.

3. (CURRENTLY AMENDED) A machine according to claim 2, in which the length of the radius of the eccentric of the paddle part, (a part of the mechanical induction) which allows the realization of a positioning of the paddle part, is defined in function with the Material Figure of the machine, (the compressive parts) and in which the mechanical induction part, which allows the control of the orientation of the paddle part, is defined in function with the Geometric figure, the Movement Figure and the Sequence of realization of the Geometrical Figure.

4 . (REMOVED) (~~A machine according to claim 1, in which the paddle has a retro rotation speed equal to the speed of the eccentric's rotation, this paddle part being coupled to the cylindrical part.~~)

5. (CURRENTLY AMENDED) (~~A machine according to claim 2, in which the ratio between the retro rotation speed of the paddle structure and the rotation speed of its eccentric is located between $1/X$, where X is the number of sides of the paddle part, and $1/1$.~~) A Turbinary type machine according to claim 2, in which the speed of retro rotation of the paddle on its crankpin or eccentric to the speed of the post rotation of this crankshaft or eccentric is between $1/1$ and the number of sides of the paddle to that of the cylinder, or either, between $1/1$ and the number of sides of paddle to that of the cylinder of the contrary type of cylinder of the machine.

6. (CURRENTLY AMENDED) A machine as described in 2 in which the ratios of retro rotation of the paddle to that of the crankpin of its crankshaft or that of its eccentric, and the post rotation of said crankshaft or eccentric, is lower than that of the number of sides of the paddle and cylinder of the contrary type of machine, the mechanical control of the orientation of the paddle being preferably assured by a mechanical induction in which the ratios of the induction and support gear are smaller to than the ratio of the number of sides of the paddle and cylinder of the contrary type of figure of the machine, with the same paddle, the kinetic and geometric characteristic of this machine is that the Material figure, the Movement figure and the Geometric figure of the machine are different than the others, and the firing Sequence is similar to the geometric figure, the number sides of Geometric Figure being superior to the number of sides of the cylinder of the contrary type of machine, the movement Figure of the extremities of the paddle points being similar , but with different angles for each extremity, the Realization Sequence of the Geometric Figure being successive, the totality of the movement Figure being realized in one turn or more of the machine's eccentric, the gear ratios of the induction mechanic of the paddle part being conform with the realization of the Geometric Figure.

7. (CURRENTLY AMENDED) A machine according to claim 2, in which the totality of the lobes (of this figure) generating (to) the Geometric Figure by (realizing) producing its sides (lobes) non successively, by alternative sides , is (being) realized by more than a rotation of the eccentric of the paddle part for each complete cycle of the cylinder of the machine (the order of compressions of a cycle is produced by according)

8. (CURRENTLY AMENDED) A machine according to claim 1, in which the dynamic of the compressive parts is realized inversely, the cylindrical part realizing the movement of rotational translation and the paddle part realizing the rotational movement, these part continuing to realize the Material Figure of the machine

9. (ORIGINAL) A machine according to claim 2, in which the dynamic of the compressive parts is realized inversely, the points of the cylindrical part realizing the Geometric Figure, and the paddle part realizing the rotational movement, these parts continuing to realize the Material Figure of the machine.

10. (CURRENTLY AMENDED) A machine according to claim 1 or 2, in which the number of sides of the Material figure of the paddle structure is superior by one to that of the cylindrical part, thus realizing the machine in its post rotary form .

11. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the number of sides of the Material Figure of the paddle part (structure) is inferior by one to that of the cylindrical part, thus realizing the machine under its retro rotary form

12. (CURENTLEY AMENDED) A machine according to claim 1 or 2 in which the Material Figure of the paddle part is realized by a plurality of paddle parts, each of these parts simultaneously realizing the Movement figure, each of these parts, as well as the cylinder, possessing its own mechanical induction, and each of these parts acting in complicity and in synchronization with the cylindrical part.

13. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the Material Figure of the paddle part is constituted of a group of straight segments, connected non-rigidly between each other by their extremities in such manner as to form a flexible paddle structure, called paddle structure, this structure being activated dynamically inside the cylindrical part, which realizes a rotational movement, the extremities of this structure realizing the Movement Figure.

14. (CURENTLEY AMENDED) A machine according to claim 13 in which the movement of the points of the paddle structure realizes a rectilinear alternative Movement Figure.

15. (CURENTLEY AMENDED) A machine according to claim 1, 2, realized when the support of one of the compressive parts is activated with a mechanical group comprised of a supplementary induction realized in combination with the original induction, making the rotary movement of a compressive part pass to a planetary movement, or even making the simple planetary movement of a compressive part to a composed planetary movement, which realizes a raise of degrees of liberty of the partial movement of the machine realized by one element, and a modification of the curvature of Movement Figure of that element, and of the curvature of Material Figure of the cylinder of the machine.

16. (CURENTLEY AMENDED) A machine according to claim 1 or 2, which puts

into layered composition, many sets of compressive parts, the number of sides of its Material Figure of each set being different for each one and either respecting the rule of sides of the art, and in which the dynamical paddle part of one of these sets is simultaneously the cylinder of the complementary set, and minimally one of these sets has a Material Figure of one its parts equal in its interior or exterior surface to the Movement Figure of one of the parts of the complementary set, or either, in which the two sets are synchronized in a way by which they are realizing the same Movement Figure and the same Sequence of realization of the Movement figure (the paddle part of one of these sets being able to serve, by its interior surface, as a cylindrical part to the interior compressive parts,)

17. (CURENTLEY AMENDED) A machine according to claim 1, 2 , in which the compressive parts and their respective mechanical parts have simultaneously opposite direction of their respective dynamics when they're observed from the exterior.

18. (CURENTLEY AMENDED) A machine as defined in 1 or 2, in which the movement of one of the compressive parts is irregular, alternatively realizing accelerations and decelerations which can, when the compressive part possesses a planetary movement, add an oscillatory character to it, these accelerative and slowed down movements being able to be realized preferably by means of polycammed gears, these accelerations/ slowed down being modified when applied to the cylinder, its dynamic and Material figure, and when applied to the mechanical means of the paddle, the Material figure of the cylinder, and that of the Movement Figure of the paddle.

19. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the gear ratios realizing the Movement Figure of the planetary part is obtained by means of a semi transmittive realization, this induction having as characteristic the fact that the mechanical induction support gear of one of the compressive parts is dynamic.

20. (CURENTLEY AMENDED) A machine according to claims 1 or 2, in which the mechanical induction supporting the paddle part in a way in which it will produce its specific Movement figure, and the Geometrical figure, being preferably but not restricted to :

a mono induction, an intermediate gear mechanic, a poly induction mechanic, an alternative poly induction mechanic, a hoop gear mechanic, a chained hoop gear mechanic, a double internal gear mechanic, a heel gear mechanic, a gear-like structure mechanic, a unitary gear mechanic, a central active gear mechanic, a stopped poly induction mechanic, a subtractive poly induction mechanic,

these inductions being realized with either with central fixed support gear, with dynamic and central support gear, with peripheral support gear, these inductions being realized according to gear ratios established in a way to realize the Movement figure, the Geometrical figure or the realization sequence of its faces.

21. (CURENTLEY AMENDED) A machine according to claim 7 in which the mechanical induction supporting the cylindrical part is preferably but not limited to one of the following:

a mono induction, an intermediate gear mechanic, a poly induction mechanic, an alternative poly induction mechanic, a hoop gear mechanic, a chained hoop gear mechanic, a double internal gear mechanic, a heel gear mechanic, a gear-like structure mechanic, a unitary gear mechanic, a central active gear mechanic, a stopped poly induction mechanic, a subtractive poly induction mechanic, these inductions being realized either with central fixed support gear, with dynamic and central support gear, or with peripheral support gear, these inductions being realized according to gear ratios established in a way to realize the Movement figure, the Geometrical figure or the realization sequence of its faces.

22. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the inductions of the compressive parts are synchronized by the sharing of a common element, this element being either:

- an eccentric,
- a dynamic support gear of a planetary induction, or
- a paddle

23. (CURENTLEY AMENDED) A machine according to claims 1 or 2 in which the power exit shaft is either:

- the eccentric shaft supporting the compressive paddle part,
- the shaft supporting the cylindrical compressive part, or
- one of the semi transmission axles

24. (CURENTLEY AMENDED) A machine according to claim 2, in which the mechanical induction of either the cylindrical or the paddle part is said to be descending, this induction being characterized by the rigid set-up upon the paddle part of a peripheral support gear, this gear activating indirectly or directly an induction gear, this induction gear being set up rigidly at the center of the cylindrical part of the machine or on an axle of the cylindrical part.

25. (CURENTLEY AMENDED) A machine according to claim 1 or 2, used as : compressor engine, pump, propeller, turbine, mechanical part of a mechanical turbine, artificial heart, and in which the cycles are definite in relation to the Sequential and the Geometrical figures.

26. (CURENTLEY AMENDED) A machine according to claim 1 or 2 in which we confer to the (paddle) compressive parts an aerodynamic curve allowing to realize the transport of substances in the machine :

- from the periphery towards the center
- from the center towards the periphery or
- from a lateral face to another

27. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the valves, spark plugs are installed on the rotary part, or the paddle part

28. (CURENTLEY AMENDED) A machine according to claim 1 or 2, in which the emplacements of the valves, spark plugs and other accessories are set up in function with the Material Figures, and of with the shape and the Figure Sequence of the Realization of the (compressions) Geometric Figure

29. (CANCELLED) (~~A machine according to claim 2, in witch the number of the paddle structure is superior by one to that of the cylinder part, thus realizing the machine under its post rotary form~~)

30. (CANCELLED) (~~A machine according to claim 2, in witch the number of sides of the paddle structure is inferior by one to that of the cylindrical part, thus realizing the machine under its retro rotary form~~)

31. (CANCELLED) (~~A machine according to claim 2, in witch the paddle part is realized by a plurality of the paddle parts, each of these part possessing its one mechanical induction, and each of these parts possessing its in mechanical induction, and each of these part acting in complicity and synchronization with the cylinder part~~)

32. (CANCELLED) (~~A machine according to claim 2, realized when the support of one of the compressive parts is activated with a mechanical group comprising a supplementary induction realized in combination with the original induction, making the rotary movement of a compressive part pass to a planetary movement of compressive part to a composed planetary movement.~~)

33. (CANCELLED) (~~A machine according to claim 2, in witch the compressive parts have a rotation in opposite direction, when the are observed by the exterior~~)

34. (CANCELLED) (~~A machine according to claim 2, in witch the support gear of the mechanical induction of one of its compressive part is dynamical~~)

35. (CANCELLED) (~~A machine according to claim 2, in witch the mechanical induction supporting the paddle structure is is one of the following : a mono induction, an intermediate gear mechanic, a poly induction mechanic, an alternative poly induction mechanic, a hoop gear mechanic, a mechanic by hoop gear with chain, a mechanic by double internal gear, a mechanic by heel gear, a mechanic by gear like structure, a mechanic by unitary gear, a mechanic by central active gear, a mechanic by central active gear, a mechanic by stopped poly induction, a mechanic by subtractive poly induction.~~)

~~These induction being realized either with central fixed support gears, with dynamical central support gear, with peripheral support gear.~~)

36. (CANCELLED) (~~A machine according to claim 2, in which the induction of the compressive parts share a common element being:~~

- ~~— an eccentric~~
- ~~— a dynamic support gear of a planetary induction or~~
- ~~— a paddle~~)

37. (CANCELLED) (~~A machine according to claim 2, in which the exit tree of power is either:~~

- ~~— the tree of the eccentric supporting the paddle compressive part or~~
- ~~— the tree supporting the cylindrical supporting part~~)

38 (CANCELLED) (~~A machine according to claim 2, used by engine, compressor, collector machine, turbine, mechanical part of a turbine, artificial heart, or wind mill~~)

39. (CANCELLED) (~~A machine according to claim 2, in which we confer the paddle part to an aerodynamic curve allowing to realize the transport of substances in the machine~~

- ~~— from the periphery towards the center,~~
- ~~— from the center toward the periphery~~
- ~~— from a lateral face the other~~)

40.(CANCELLED) (~~A machine according to claim 2, in which the emplacements of the valves, spark plugs and other accessories are set up in function of the material figure and the sequence of and the realization sequences of compressions~~)

41 (NEW) A machine as described in 2 in which the kinetic and geometrical realization of the machine occurs when the figures realized by the Movement Figure of the paddle, by the Geometric Figure and by the Geometric Figure Sequence are similar or identical, this figures realizing a number of sides equal to the number sides of the cylinder of the opposite rotary type of the Material Figure of the machine, the centers of the Movement Figure, Geometric Figure, and Sequential figure, coinciding with the center of the cylindrical cavity, the ratios of retro rotation of the paddle on its crankpin of the crankshaft or its eccentric is equal to the ratio of the number of sides of said paddle to that of the number of sides of the opposite type of the Material Figure of the machine for the same paddle, the mechanical control of the orientation of the paddle being preferably assured by a mechanical induction in which the induction and support gear ratios are the same, thus the rotary movement of the cylindrical part around the paddle structure, and whose speed is equal to $360/\text{number of sides of material cylinder minus number of degrees of rotation of the eccentric between each peak paddle}$

42 (NEW) A machine as described in 2 in which the kinetic and geometric characteristic is that the number sides of Geometric Figure is inferior to the number of sides of the cylinder of machine , the center of this Geometric Figure coinciding with the center of the cylindrical cavity, the movement Figure of the extremities of the paddle points being equal for each extremity, and different from the Geometric Figure and the Material Figure, the Realization Sequence of the Geometric Figure being successive, the totality of the movement Figure being realized in one turn or more of the machine's eccentric, the gear ratios of the induction mechanic of the paddle part being conform with the realization of the Geometric Figure, the ratios of retro rotation of the paddle on the crankpin of its crankshaft or of its eccentric, and the post rotation of this said crankshaft or eccentric, smaller than that of the number of sides of the paddle and piston of the contrary type of machine, the mechanical control of the orientation of the paddle being preferably assured by a mechanical induction in which the support and induction gear ratios are higher than the ratio of the number of sides of the paddle and piston of the material figure of machine, thus the rotary movement of the cylindrical part the opposite cylinder type of that of the Material figure's cylinder around the paddle structure, and whose speed is equal to $360/\text{number of sides of material cylinder minus number of degrees of turning of the eccentric between each paddle peak of the same paddle}$.

43. (NEW) A machine according to claim 1 or 2, which puts into lateral layered composition, many sets of compressive parts, the paddle part of the machine being prolonged or doubled by an other paddle part, and, according to the Movement figure and Geometrical figure, makes said paddle capable of being mounted in a planetary way in a fixed cylinder of the shape of the Movement Figure of the paddle, the same mechanical induction preferably serving to the whole.

44. (NEW) A machine according to claim 1 or 2 in which the orientational guiding mechanic of the rotational compressive part, respecting the realization of Movement Figure, Geometrical figure and Figure of Sequence of realization of the Geometrical figure, is realized in a semi transmittive manner, said semi transmission activating parts in different ways on the same axe of rotation

45. (NEW) A machine according to claim 1 in which a semi transmission is reversing and modifying the rotation of the crankshaft or eccentric, into a rotational action of either the cylinder or the cylinder and the support gear.

46. (NEW) A machine according to claim 1 or 2 in which the rotary part, either paddle, cylinder, or support gear, independently or together, is lead by a semi transmittive induction from center to center, the support and induction axles being both located upon a same center, this semi transmission being either accelerative or in slow down motion, in either the same or opposite direction.

47. (NEW) A machine according to claims 1, 2, or 3, in which the direction of the expansion of the paddle is realized in a straight line, or in a curve in which the general tendency is perpendicular to the line of the piston surface during the explosion

48 (NEW) A machine as defined in 2 , in which the mechanical type of induction stays the same as that of the Material Figure , its ratios being relative to the Geometrical and Sequential Figures.

49 (NEW) A machine as defined in 2 , in which the mechanical type of induction is of the contrary type of the Material Figures its ratios being relative to the Geometrical and Sequential Figures.

50 (NEW) A machine as defined in 1 in which the paddle part is supported by a set of crankshafts set up in a rotary manner inside the machine housing , these crankshafts being provided either with mechanisms assuring their rotation in the same direction and at the same speed, the crank pin of each of these crankshafts being inserted in a rotary manner inside one of the piston parts, or rather each of the crankshafts being coupled to axles rigidly fixed on the paddle, each of these crankshafts being provided with a gear, each of these gears being coupled directly, or indirectly, by the help of intermediate gears, to the cylinder induction gear, fixed rigidly to its center .

51. (NEW) A machine, as described in 2, in which the Material Figure of the post rotary Type, is realized with a mechanic of the retro rotary type, or inversely, in which the Material Figure is of the retro rotary type and the mechanic is of a post rotary type.

52 (NEW) A machine, as described in 1 or 2, which is utilized as an orientation means of a paddle, thus permitting this paddle to realize in its cylinder, successive accelerations and decreases in speed of retro rotation of the paddle on its center